

Inasmuch as neither the problem, nor the solution, provided by Applicant set forth in Claims 30-33 and 35-38, the claims are not anticipated or suggested by Koester, and their allowance is urged.

Claims 39-42 were rejected as unpatentable over Koester. This rejection is respectfully traversed. It will be noted that Claim 39 calls for an objective for focusing two beams at spots spaced from each other in the image plane which beams overlap in the section outside the vicinity of the image plane. As discussed above, Koester does not even foresee the need for overlapping nor does his optics provide for same.

The rejection of Claims 39-42 is based upon the use of a reference arm being obvious in that a reference arm could be useful (in Koester) for the purpose of controlling the intensity of the light source at a constant level. With all due respect, this is not the case. Koester teaches a sectional microscope where spatial filters restrict the image to a given section. Interference microscopy utilizes the temporal coherence of light to produce a sectional image using low coherence light and a two-arm optical system. The optical signal is only seen for those places in the object where the optical path from the source to the detector through the reference arm are equal to the optical path from the source to the detector through the object arm. A reference arm establishes the interference condition to localize the image, not match intensity as claimed by the Examiner. As noted above, Koester uses spatial filtering to generate a sectional image and there would be no reason to add a reference arm. Accordingly, the Examiner's rationale for his rejection that Claims 39-42 are obvious from Koester is not well taken. Claims 39-42 are therefore respectfully submitted to be patentable over Koester.

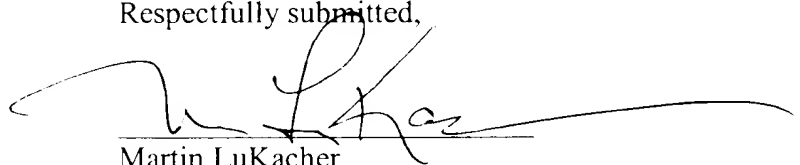
Claims 29-42 were rejected as unpatentable over Barenboim et al. (U.S. Patent No. 5,699,160), Bou-Grannam et al. (U.S. Patent No. 5,710,631), Ooki et al. (U.S. Patent No. 5,764,363) or Smith (U.S. Patent No. 3,958,884) in view of Koester. This rejection is respectfully traversed. The Barenboim, Bou-Grannam, Ooki and Smith patents were discussed heretofore in the prosecution of this application. Review of these discussions will make apparent that these patents are strictly for profilometers and not for imaging of a section inside a medium. Koester does not add any technology to these patents which would enhance the image by reducing the effect of light from the sites adjacent to the section. This is because the beams in Koester are not overlapping between the

illumination and the detection in the medium. This is the case even if differential interference microscopy alluded to in one sentence only in the Koester patent was involved. Accordingly, it is believed that the claims are not rendered unpatentable by the combination of references utilized by the Examiner and their allowance is urged.

Favorable action upon further consideration of this application and the allowance thereof is respectfully solicited.

Respectfully submitted,

Dated: July 15, 2002



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Enclosures: Combined Amendment Transmittal and Petition for Extension of Time
and Check in the amount of \$55.00; and
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APPENDIX

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Marked up version of Amended Claims 30 and 35.

30. (amended) [The system according to Claim 29] A system for imaging a section of a medium which receives and returns light from the section and from sites adjacent to the section, said system comprising:

optics for directing light in beams of different polarization in said medium along an imaging plane inside the medium and collecting returned light from the medium;
means for generating an image of the section from said returned light in response to a polarization parameter of said returned light; and

wherein said beams are overlapping in said medium outside the imaged section to reduce the part of said returned light from the sites adjacent said section on opposite sides of said section in the direction of propagation of the beams.

35. (amended) [The method according to Claim 34] A method for imaging a section of a medium which receives and returns light from the section and from sites adjacent to the section, said method comprising the steps of:

directing light in beams of different polarization in said medium along an imaging plane inside the medium;
collecting returned light from the medium;
generating an image of the section from said returned light in response to a polarization parameter of said returned light; and

wherein said beams are overlapping in said medium outside the image section to reduce the part of said returned light from the sites adjacent said section on opposite sides of said section in the direction of propagation of said beams.